KODAK PROFESSIONAL DURAFLEX Plus Digital Display Material

—as white as it gets—

—NOTICE OF DISCONTINUANCE—

Due to reduced demand, we are discontinuing KODAK PROFESSIONAL DURAFLEX® Plus Digital Display Material. While there are no direct replacements for this product, Kodak offers a range of other display materials that may provide a suitable alternative. See **www.kodak.com/go/endura**

KODAK PROFESSIONAL DURAFLEX Plus Digital Display Material provides silver halide display prints from digital files, negatives, or internegatives. Compatible with both digital and optical printers, it is ideal for creating striking point-of-purchase materials, trade show and retail displays, floor graphics, hanging displays, counter mats, and any other application calling for brilliant whites and exceptional color.

Compared to previous DURAFLEX Materials, KODAK PROFESSIONAL DURAFLEX Plus Digital Display Material delivers superior whites, improved color reproduction, easier calibration, and improved text clarity.

Process KODAK PROFESSIONAL DURAFLEX Plus Digital Display Material in KODAK EKTACOLOR Chemicals for Process RA-4.

FEATURES	BENEFITS
• Noticeably whiter, brighter D-min	• Whitest "FLEX" on the market • Clean highlights
• Modular Imaging Support Technology, a patented multi-layer opaque base	• Ultra-white backgound makes images stand out • Excellent sharpness, crisp text • Easy handling; 25% less weight than previous DURAFLEX Materials • Resistance to wear; tear-proof
• Digital and optical capability	• One product for multiple systems • Simplified inventories
• High D-max	• Deep, rich blacks
• Wider color gamut	• Accurate, consistent reproduction of colors; differentiation between similar colors • Excellent reproduction of low-density pastels
• Simple calibration	• Easy adaptability • Higher yield, less waste

SIZES AVAILABLE

This material is available in a variety of roll sizes.

Sizes and catalog (CAT) numbers may differ from country to country. See your dealer who supplies KODAK PROFESSIONAL Products.

In. x ft (cm x m)	Spec	CAT no.
20 x 100 (50.8 x 30.5)	902*	896 5683
30 x 100 (76.2 x 30.5)	901†	135 9827
32 x 100 (81.3 x 30.5)		104 2571
40 x 100 (101.6 x 30.5)		100 7996
50 x 100 (127 x 30.5)		827 0605

* Spec 902: unperforated, emulsion out, no leader or trailer, no edge markings.
† Spec 901: unperforated, emulsion in, no leader or trailer, no edge markings.

STORAGE AND HANDLING

Store unexposed materials at 13°C (55°F) or lower in the original sealed package. High temperatures or high humidity may produce unwanted quality changes.

To avoid moisture condensation on material that has been refrigerated, allow it to warm up to room temperature before opening the package. For best results, remove the material from cold storage the day before you use it, or allow the material to warm up for the appropriate time from the following table.

Warm-Up Time (Hours) to Reach Room Temperature of 70°F (21°C)			
Size	From a Storage Temperature of		
	-18°C (0°F)	2°C (35°F)	13°C (55°F)
20-inch x 100-foot roll	8 hours	7 hours	4 hours
32-inch x 100-foot roll	10 hours	8 hours	5 hours
40-inch x 100-foot roll	11 hours	9 hours	6 hours

DARKROOM RECOMMENDATIONS

Handle these materials in total darkness. Be sure that your printing and processing darkrooms are lighttight. Carefully control stray light within your printing equipment.

Note: Using a safelight *will* affect your results. These materials are much faster than traditional materials. They are very sensitive to safelights; sensitometric shifts can occur before you observe any changes in D-min.

EXPOSURE

Digital Printing

Expose these materials in various types of digital enlargers and printers, such as (but not limited to)—

- DURST Lambda 130 and DURST Epsilon Digital Laser Imagers
- Gretag Imaging LIGHTJET Series or Digital Recorder

Because there are numerous manufacturers and models of digital writers, we cannot provide starting-point exposure calibration aims for all equipment. We recommend that you test the materials and calibrate your printer to achieve optimum results.

For optimum results, follow your equipment manufacturer's recommendations for calibrating your printing equipment.

Calibrating the DURST Laser Imagers

For DURST Lambda Digital Laser Imagers, basic calibration starting values follow. The values are based on readings from an X-RITE DTP-36 Densitometer.

DURST Lambda 130 and 76 Laser Imager

Process RA-4	D-max	Basic Calibration (Starting Values)
RA-4	R = 235 G = 230 B = 225	Y = 69.77 M = 54.48 C = 0.0 D = 119.27

DURST Epsilon Laser Imager

Process RA-4	D-max	Basic Calibration (Starting Values)
RA-4	R = 2.30 G = 2.20 B = 2.10	Y = 0.216 M = 0.239 C = 0.000 D = 0.845

IMPORTANT:

1. Using higher D-max values than those listed above may result in:
   - overexposure
   - small text closing up; unsharp text
   - oversaturated colors in step 21 (e.g., red becomes orange, etc.)
   - insufficient laser power for exposure to start
2. When using the above starting values for the basic calibration, load the paper as "New Paper Type," and do not copy an already calibrated channel.
3. Your Process RA-4 must be to aim and reach a density of 2.10 in each color on D-max of your process control strip; otherwise you may have problems reaching D-max. Also, you may experience a yellow halo around black text and you will not get a pure white.
4. To obtain a neutral gray, use a lower D-max for blue than for red and green.
   (Example: R = 230, G = 215, B = 200)

Calibrating the Gretag Imaging LIGHTJET Printer

Calibration targets for the Gretag Imaging LIGHTJET Printers must be downloaded from **www.cymbolic.com**.

Select **Service/Support**
Select **FTP site**
Select **LightJet 5000 and 430 material files**
Select **LightJet 430 & 5000**
Select **LightJet-Fusion**
Select appropriate printer **LightJet 430** or **LightJet 5000**
Select appropriate computer **DecAlpha** or **Intel**
Click on **Kodak Duraflex Plus - revA.exe**

This will download an executable to your hard drive. Once run, it will place the targets in the appropriate folder.

Create a new configuration in Fusion and calibrate.

Optical Printing

Expose these materials with enlargers equipped with tungsten or tungsten-halogen light sources or photo enlarger lamps (e.g., No. 212 or 302).

For best results with these materials, use a black-base printing easel with easel blades to prevent reflections. Using a light-colored easel can affect color balance. Tape (or any other material that can cause a reflection on the printing easel) may form an image through the base of the material. You can also expose DURAFLEX Plus Digital Display Material in automatic printers, such as the KODAK 3510, 2610, 2620, or 312 Color Printer or KODAK MC Digital or S-Type Color Printers. Set up and balance printers according to the manufacturer's instructions. If your printer is equipped with a punching device, turn the punch off; it may not be able to punch through the polyester base.

Do not use fluorescent lamps to expose these materials. Use a heat-absorbing glass to remove infrared radiation. Because voltage changes affect light output and color quality, use a voltage regulator.

Keep negatives and the equipment optical system clean. Mask negatives to eliminate stray light. You can use the white-light or the tricolor exposure method.

White-Light Exposure Method

Control color balance with dichroic filters built into the enlarger or printer, or with KODAK Color Printing (CP) Filters (Acetate) or KODAK Color Compensating (CC) Filters (Gelatin) placed between the lamp and the negative. You can also use CC filters between the negative and the material; however, use as few filters as possible—preferably not more than three. You can use any number of filters between the light source and the negative. If you use cyan filtration, use filters with the suffix "-2" (e.g.,"CP10C-2").

To begin, make a test print with a starting filter pack of 50M + 30Y. Adjust the exposure to obtain satisfactory density; adjust the filtration, if necessary, to change color balance.

Tricolor Exposure Method

Use KODAK WRATTEN Gelatin Filters No. 25 (red), No. 99 (green), and No. 47B (blue) to give the material three separate, consecutive exposures, one through each of the filters. Be careful not to move the material or the enlarger until you have made all three exposures. Typical exposure times at *f*/8 for making a 3X enlargement from a normally exposed negative are given in the table below.

Filter	Times for an Aperture Setting of *f*/8*
Red	3.5 seconds
Green	3.9 seconds
Blue	6.5 seconds

* For an enlarger equipped with a Photo Enlarger Lamp No. 212 or No. 302; the setting may vary with other types of lamps.

LATENT-IMAGE KEEPING

There may be some noticeable shifts in the images if the time between and process is inconsistent. For best results, hold your exposed images for at least 10 minutes prior to processing.

PROCESSING

Use KODAK EKTACOLOR Chemicals for Process RA-4 in continuous or roller-transport processors.Your processor must be capable of handling the 9-mil polyester base. Use the same machine settings that you currently use for traditional print materials.

Underdrying can produce tackiness that tends to make paper stick when it is wound into rolls before cutting. *Overdrying* can cause curl and complicate transport in print finishing. Do not use drying temperatures above 93°C (200°F) to avoid damage to prints.

For more information, see KODAK Publication No. Z-130, *Using KODAK EKTACOLOR Chemicals* on our website at *www.kodak.com/go/photochemicals*.

VIEWING

Evaluate prints under lights of the same color quality and brightness that you will use to view the final prints. A good average condition is a light source with a color temperature of 5000 K ± 1000, a Color Rendering Index of 85 to 100, and an illuminance of at least 50 footcandles (538 lux). Fluorescent lamps such as cool white deluxe (made by several manufacturers) meet these conditions.

You can also use a mixture of incandescent and fluorescent lamps. For each pair of 40-watt cool white deluxe fluorescent lamps, use a 75-watt frosted, tungsten bulb.

Viewing conditions should meet ANSI Standard PH2.30-1989.

POST-PROCESS TREATMENTS

Spotting and Retouching

Retouch or spot this material with the same methods used for KODAK EKTACOLOR Papers. The dye stability of this material will not be affected if the instructions given in KODAK Publication E-70, *Retouching Prints on KODAK EKTACOLOR and EKTACHROME Papers,* are followed.

Laminating Prints

You can laminate prints on DURAFLEX Plus Digital Display Material. Laminate both sides of identification cards to protect against moisture.

Notice: Many municipalities have adopted as part of their local fire codes the National Fire Protection Association (NFPA) 701-1999 *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films,* which applies to plastic films used for decorative or other purposes inside buildings. To comply with this standard, you must protect displays using any of these plastic films.

We strongly recommend that you take one or both of the following measures to protect all large displays, especially if the material is displayed in a public area:

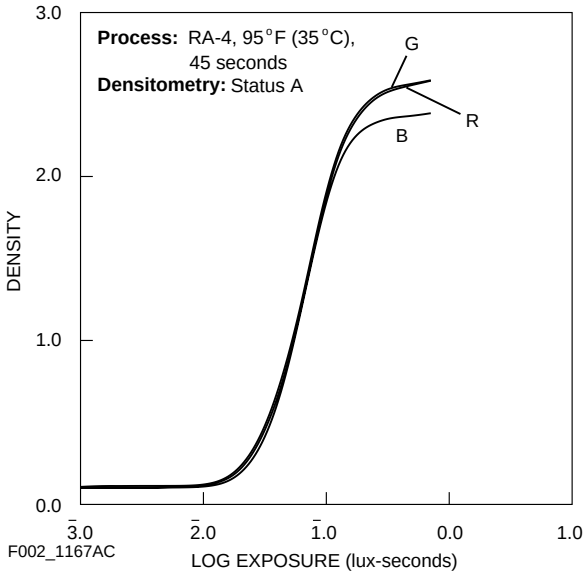
- Fully enclose the materials in a light box or an illuminator.
- Frame and laminate the materials to a non-combustible mounting board, wall, glass, or1/4-inch or thicker polycarbonate, e.g., Lexan, support.

Other standards covering the burning characteristics of these products may apply to markets outside the U.S. Check with the appropriate local agency. Do not use these materials as backdrop displays in theaters.

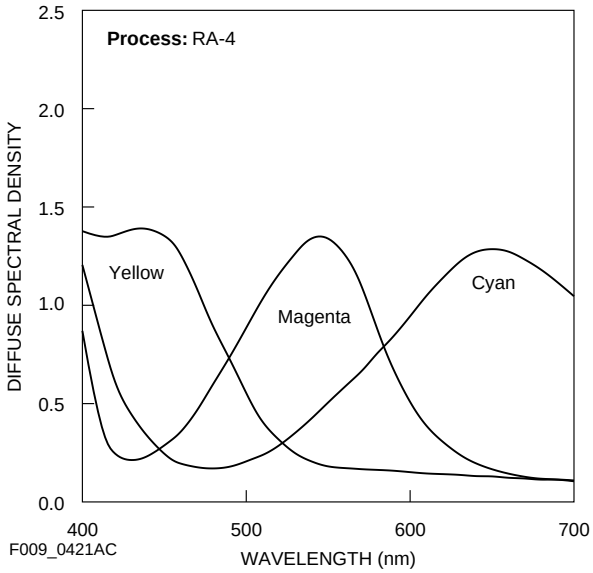
For more information, see CIS-37, *Combustion of KODAK Films, Resin-Coated Photographic Papers, and Print and Display Materials*.

CURVES

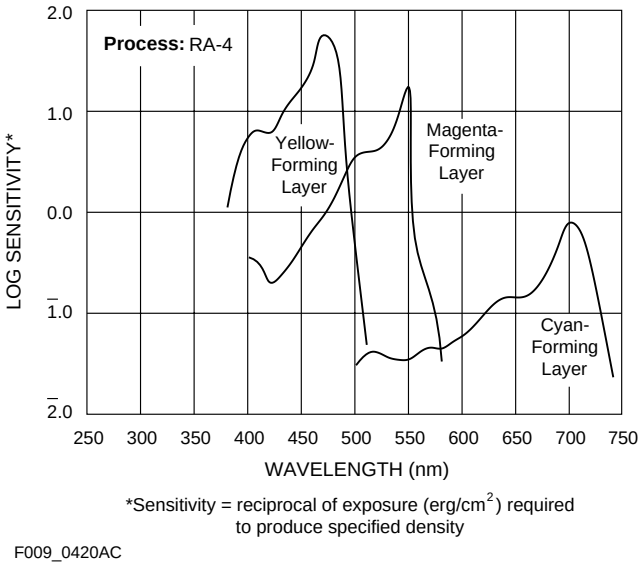
Characteristic Curves



Spectral-Dye-Density Curves



Spectral-Sensitivity Curves



NOTICE: The sensitometric curves and data in this publication represent product tested under the conditions of exposure and processing specified. They are representative of production coatings, and therefore do not apply directly to a particular box or roll of photographic material. They do not represent standards or specifications that must be met by Eastman Kodak Company. The company reserves the right to change and improve product characteristics at any time.

MORE INFORMATION

Kodak has many publications to assist you with information on Kodak products, equipment, and materials.

The following publications are available from dealers who sell Kodak products, or you can contact Kodak in your country for more information.

E-30	*Storage and Care of KODAK Photographic Materials—Before and After Processing*
E-70	*Retouching Prints on KODAK EKTACOLOR and EKTACHROME Papers*
E-71	*Retouching Color Negatives*
E-176	*Post-Processing Treatment of Color Prints—Effects on Image Stability*
J-39	*Tray, Drum, and Rotary-Tube Processing with KODAK EKTACOLOR RA Chemicals*
K-4	*How Safe is Your Safelight?*
Z-130	*Using KODAK EKTACOLOR RA Chemicals*

For the latest version of technical support publications for KODAK PROFESSIONAL Products, visit Kodak on-line at:
http://www.kodak.com/go/professional

If you have questions about KODAK PROFESSIONAL Products, call Kodak.
In the U.S.A.:
1-800-242-2424, Ext. 19, Monday–Friday
9 a.m.–7 p.m. (Eastern time)
In Canada:
1-800-465-6325, Monday–Friday
8 a.m.–5 p.m. (Eastern time)

Note: The Kodak materials described in this publication for use with KODAK PROFESSIONAL DURAFLEX Plus Digital Display Material are available from dealers who supply KODAK PROFESSIONAL Products. You can use other materials, but you may not obtain similar results.

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